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BEAUVAIS CATHEDRAL.



THE NORTHERN AISLE OF THE CHOIR.

THE CATHEDRAL OF BEAUVAIS, IN FRANCE.

THE first view of Beauvais Cathedral at a distance of three or four miles is most extraordinary. The stranger is at a loss to know what it is he sees. Lofty enough to be the tower of a church, yet the form of it forbids the supposition; and when seen through a hazy atmosphere it has been mistaken by the traveller for an isolated rock on an artificial mount; and he is surprised to learn that it is the body of a cathedral, which has no tower, or spire, or turret, and scarcely any pinnacle which rises higher than the ridge of its roof.

The ground about this cathedral is so far from being level that the south porch is ascended by fourteen steps, and the north by only four. This unevenness in the surface of the ground is not caused, as some have supposed, by an accidental accumulation of rubbish, but is entirely natural, and was so at the time when the foundations of the present structure were laid. A similar and even greater inequality of surface is observable in the sites of many other cathedrals, and is thus accounted for by Mr. Winkles, from whose beautiful volume on French cathedrals the present notice is abridged.

That such sites should be selected when more convenient ones were always at hand; or, that when selected they should not have been levelled, which would have been far less troublesome and expensive than the plan which must otherwise be adopted, to make the pavement of the church level with the highest point of the natural surface, may excite our surprise; but our surprise will cease when we remember that the original site was either supposed to have been pointed out by a direct communication from heaven, or else was well ascertained to be the spot where the first preacher of the Christian faith, and afterwards the first bishop of the converts in that place, became a martyr. Such a spot would, generally speaking, afford a natural level surface sufficiently spacious for the small wickerwork, or at best, mud-built, and reed-thatched oratories, which were all that the skill and means of the first Christian age in France and England could erect to the pious memory of the martyred saint, and for the public worship of the Saviour. Hence an excessive though amiable veneration for the original site was produced, and handed down from generation to generation; so that when these lowly and frail structures gave way, in more prosperous times, to somewhat larger buildings of stone, and these again in their turn to those sumptuous and magnificent edifices which still exist to astonish and delight the world, the same hallowed spot was carefully preserved untouched, and inclosed somewhere within the walls. To cut the natural surface of the ground for the purpose of levelling it would have been deemed a sacrilegious act; any difficulty, therefore, arising from situation was met in another way, and the bishops and other benefactors, in rebuilding their cathedrals, neither forsook nor touched the original site, even though the more extended scale and dimensions of the new building made that site both unsuitable in appearance, as well as inconvenient and expensive in adoption.

The whole exterior of Beauvais Cathedral is bold and majestic in its dimensions, graceful in its proportions, rich and delicate in all its wonderful display of detail. The fronts of the transept are very superb examples of what has been called in France the Flamboyant style of architecture, from the flame-like form of its tracery and panelling; it is the latest style of Gothic in France, and answers in its date and application to what in England has been denominated the perpendicular style, because its tracery and panelling assume principally that direction.

The first impression on entering the choir is truly magical; the second, that of danger from the enormous and exaggerated height, which is perhaps, after all, more wonderful than pleasing. "Passing down the centre," (says Mr. Woods,) "the view of the choir is really sublime; and the slender columns, the triple range of windows, and the loftiness of the upper ones, have an appearance almost supernatural." Mr. Whewell compares Amiens Cathedral to a giant in repose, and

this of Beauvais to a tall man on tiptoe; a very happy illustration of the effect produced by them upon the mind at first sight. There is a great similarity between the choirs of the two cathedrals; but the principal charm of the choir of Beauvais resides in the apse*. There is a peculiar dignity and grace about its columns and arches, and in its form, dimensions and proportions, which produce a fascinating effect on the beholder. But the greater portion of the choir is disfigured,—first, by a double row of stalls on each side of it; and secondly, by eight pieces of Beauvais tapestry suspended in frames four on each side, about half-way up the pillars. They are copies from Raffaell's cartoons, and are much esteemed; but in their present position they positively disfigure the cathedral.

All the continental nations are very partial to such adventitious furniture (for we cannot grant it to be decoration), in their churches at all times, and especially during festivals. This custom, in the estimation of an architect, is more honoured in the breach than in the performance of it; it spoils the effect of all architecture, and especially of the Gothic. It should be remembered, that in Gothic churches the decoration is worked in with the structure itself; that the columns have their garlands in their capitals; the walls, their drapery in their panelling, and their ornaments in niches, with their statues, brackets, pendants, and pinnacles; that the arches are already adorned in the best manner possible, by their mouldings, and alternate rows of statues and foliage; that, in short, the building comes out dressed for a fête from the hands of the architect and sculptor; it is, as it were, born with its holiday suit on, and therefore, anything superadded, proves not a decoration, but a blemish.

The pavement of the choir is of marble, and the mosaic work very beautiful; it is higher than the pavement of the transept, from which it is ascended by four steps. The choir is fenced out from the side aisles all round by a modern wrought-iron palisading, altogether out of place here. The screen is of wood, and very mean. The side aisles on each side of the choir are double; the outer aisle round the apse being formed into seven chapels, inserted between the buttresses, which are produced inwards, and form the sides of these chapels; their eastern ends are each three-sided bays, with windows in each side; their western ends are each open to the aisle.

Our frontispiece represents the northern aisle of the choir, showing the monument of Cardinal Forbin: it is of beautiful design, and excellent workmanship. Close to this monument stands the ancient cathedral clock.

The present choir was commenced in the year 1225, by Miles de Nanteuil, bishop of Beauvais, and it was his intention to produce a cathedral on a scale corresponding with the wealth, dignity, and importance of the see. The vaulting fell in about fifty years after it was finished, and was reconstructed in the year 1272. Twelve years afterwards it again fell in, and forty years were employed in reconstructing and securing the third vaulting from a similar calamity: which would probably have remained to this day had it not been for the neglected state in which it was left from the time of the Revolution till the month of December, 1802, when it suddenly fell during the night. This last misfortune has since been repaired, and the vaulting restored as it was before the accident.

In the year 1338 Enguerrand, surnamed the Rich, was appointed architect, and the work was carried on with great zeal for several years, when it was interrupted by a series of national calamities, and not resumed till 1500, when the transept was begun, but not completed till 1555. Soon after this period a central tower was begun, and carried up to the enormous height of 455 French feet; this tower fell within a few years after it was finished, on Ascension day, 1573, with a frightful noise, and covered the city with a thick cloud of dust. The building of this tower is said to have been determined on

* The apse or apsis is the curved or multangular termination of a cathedral choir, &c.

(instead of proceeding with the nave) in consequence of the fame which Michael Angelo had obtained by the construction of the dome of St. Peter's, at Rome. The architects, whose names were Waast and Maréchal, wished, it is said, to show that the Gothic style was capable of reaching a greater height than that of the Greeks and Romans; and had they not in some measure forgotten or neglected the principles of the Gothic architects of the better times of the art, perhaps their boast might have been verified; as it was, the architect who was sent to examine the tower, when it was suspected to be dangerous, had but just time to warn the congregation of its approaching fall, which took place before he reached the bottom.

To close up the opening which the falling of the tower had occasioned in the central part of the transept, a vaulting of wood was constructed, similar to the choir vaulting: the outer roof was also replaced, and above it was raised a belfry, covered with lead, in which were placed, in 1576, the four bells. These repairs were made by the munificence of Charles IX., and of Cardinal Charles de Bourbon, bishop of Beauvais. The vaulting of the transept from the centre to the end, which abuts upon the street of St. Peter, also injured by the falling of the tower, was now repaired. That end of the transept was built by Francis I., in manifestation of his gratitude to the chapter of the cathedral, who had given from their own funds a large sum towards the ransom demanded for his liberty when he was a prisoner in Spain. The transept being finished, the building of the first two compartments of the nave towards the choir was continued, the foundations of which had long been laid, but the insufficiency of the sums destined for this immense undertaking caused the bishop and chapter to suspend the work, and to close up the cathedral with a plain and strong wall of stone; and it is probable that no one will venture to recommence the building of the nave, from despairing to erect one, as light, as lofty, and as bold as the choir and transept to which it must be joined.

The stained glass in the windows, though to some extent damaged by time and revolution, is still a principal feature in the internal decoration of this cathedral. It was executed at the very best period of the art, and is exceedingly rich and glowing.

This notice will not be complete without a few words descriptive of the city. It is seated on the little river Terrain, and is in the department of the Oise. The ancient name was Cæsaromagus, afterwards changed to Bellovacum, the chief town of the Gallic tribe called Bellovaci, and hence the modern name. The population is about 13,000. The city is badly built; the streets are crooked, and contain a number of wooden houses with their gables facing the street, without any attempt at regularity. The manufactures of the place confer upon it some importance. It contains a royal manufactory of carpets, founded by Colbert, in 1664, and still belonging to the government. A certain quantity of carpeting is supplied annually to the royal palaces, and public offices, and the remainder is sold to the public. These carpets are celebrated, and obtain a high price. Various other manufactures, chiefly in wool, are also carried on. The trade in linen is considerable, especially that description called "demi-Hollande," or half-Holland, from being half the length of the Dutch linens.

Beauvais was formerly strongly fortified; but the old walls have given way to an agreeable promenade. It was besieged unsuccessfully by the English in 1443. In 1472 Charles le Temeraire, duke of Burgundy, attacked it with an army of 80,000 men, but the attempt failed in consequence of the valour of the inhabitants of both sexes. The women, under the conduct of Jeanne la Hachette, displayed the greatest courage. The exploits of this heroine form the subject of a picture in the town hall; and in memory of the event a festival was held on

every 10th of July, in which the women took precedence of the men. The revolution abolished this as well as many other old customs; and swept away much of the ecclesiastical character of the city; for before that stormy period Beauvais had, in addition to its cathedral, six collegiate churches, and thirteen parish churches. Indeed, the sway of the Romish church in this little city was complete. There were three abbeys for men; one of the Benedictines of the congregation of St. Maur, one of the order of St. Augustin, and one occupied by the Lazarists; a seminary for priests directed by the Lazarists; seven convents for religious orders of both sexes; and some others. The bishops of Beauvais were temporal peers, with the title of Counts of Beauvais.

The church of St. Etienne is older than the cathedral: portions of it, especially the windows, are spoken of in terms of admiration.

ON THE EXISTENCE OF TOADS AND OTHER ANIMALS WITHIN BLOCKS OF WOOD AND STONE.

I.

THE belief that some living animals continue to exist in a torpid state, in situations where they have been excluded from air and nourishment for a long series of years, is one that has received confirmation from numerous, and oft-repeated statements; yet we find the opinions of naturalists decidedly opposed to the theory. The grounds of this opposition seem to be, in the first place, that it is contrary to the general plan observable throughout creation, that animal life can endure for centuries, without the support of air or food.

The harmonies of the natural world are everywhere conspicuous, (says Mr. Swainson,) and how can we suppose that the most perfect works of the Creator, save and except man, have been framed without any regard to unity of plan, and harmony of purpose? The supposition is monstrous, and not to be admitted for a moment. This alone should be sufficient to shake our prejudices in favour of all such systems or theories, as are made applicable to one division of nature and not to another.

In order to give our readers an opportunity of judging between the facts stated by different authorities as genuine, and given to us with all the particularity of real occurrences, on the one hand, and of the investigations and experiments of scientific men on the other, we subjoin the following details, selected from the large number which have appeared on the subject.

It is related in the *Memoirs of the Academy of Sciences*, for 1719, that a toad was found alive and healthy, imbedded in the heart of an old elm. Again, in 1731, another was discovered in the heart of an oak, without any visible means of entrance to its habitation, and from the size of the tree it was concluded that the animal might have been confined in that situation at least eighty or a hundred years. In 1773 an account was given in the *Gentleman's Magazine* of a large live toad having been found at the distance of a hundred and eighty feet underground, at the Latham coal works in Lancashire. The reptile was imbedded in a large lump of coal. At Chillingham Castle, in Northumberland, there was formerly a chimney-piece of sandstone, from which a live toad was said to have been taken. The chimney-piece is broken and removed, but there was a frame in existence about sixty years ago, which hung over the mantel-piece, containing a coat of arms, with a toad in the field, a toad-stool, with a small toad seated upon it, for the crest, and a mantling of interwoven snakes. An inscription, written in quaint Latin, recorded the fact of a living toad having been discovered in the solid rock from which the chimney-piece was cut.

In 1832 a regular affidavit was made before a magistrate respecting the finding of a frog in a huge block of mill-stone grit, on Stanmoor, Westmoreland, by four

men engaged in repairing a highway. In their deposition, made at the request of a clergyman who wished effectually to remove all doubt as to the fact, these men affirmed that, on splitting a block of more than a ton weight, they were astonished by a lively yellow frog springing out of a cavity in the centre, where it had been as closely imbedded "as a watch in its outer case, without any communication with the outer surface nearer than eight inches." The frog was conveyed to Brough, and given to a surgeon of that place, who had it in his possession, in a healthy state, the year following the occurrence.

In 1835 a communication was made by Mr. Sturge of Birmingham, at one of the sectional meetings of the British Association, respecting a live toad found imbedded in stone on the London and Birmingham Railway. The toad was found in a piece of freestone, which had no perforations, or other apparent means for the animal's respiration: on the first breaking of the stone, the skin of the reptile was of a bright colour, approaching to yellow, but in fifteen or twenty minutes afterwards, the colour changed to dark greyish, approaching to black. It first appeared to breathe with difficulty, but gradually showed more freedom of respiration. It lived about four days, and would probably have lived longer, had sufficient caution been used in avoiding too great exposure in its new state of existence.

We might give other accounts of toads found in the solid rock; but we deem the above sufficient for our purpose. There have been other animals besides toads and frogs imbedded in this manner, if we may trust the statements that have been put forth on the subject. A Fife-shire stone-mason, named David Vertue, while dressing a block of sandstone, with a view to make it serve as a mill-stone, (August, 1821,) found a living lizard within it. The reptile was about an inch and a quarter long, of a brownish yellow colour, with a round head, and sparkling prominent eyes. It was apparently dead, but after five minutes' exposure to the air, it showed signs of life. It soon after began to run about with much celerity, when it was brushed off the stone and killed. When found it was coiled up in a round cavity of its own form, being an exact impression of the animal. There were about fourteen feet of earth above the rock, and the block in which the lizard was found, was seven or eight feet deep in the rock, so that the whole depth of the animal from the surface was twenty-one or twenty-two feet. A fish about six inches long was also found by some workmen at Buckhaven in Fifeshire, when quarrying stones on the beach for the erection of a harbour. It lay in a cavity full eight inches deep, and appeared stiff and dead when first taken out of the stone, but shortly after showed symptoms of animation, and remained alive for a few hours.

The above instances have nothing very extraordinary in them, as it respects the means by which the animal became buried in the rock or tree. In the latter case it is very easy to suppose that the animal crept into a chink or fissure in the timber, as a temporary home; and then falling into a state of torpor, the fissure closed up, and prevented its subsequent egress. When a wound has been made in the main stem of a tree, as in the case of pruning, or when deep inscriptions have been carved, the new tissue increases with great rapidity, and soon covers the defective part. But the marks of the injury will remain beneath the surface: thus, when the letters of an inscription have penetrated beneath the bark into the woody layers, an impression is left of them, and they may be found beneath the new wood at any distance of time. This accounts for the apparently marvellous circumstance, that birds' nests, stags' horns, and other articles, have been found in the very heart of some trees, where they must have been imbedded by the enlargement of the stem. In the case also of animals found in stone, the explanation of the circumstance is not difficult,

for the solid rocks from which they have been hewn, were once mere masses of soft sand, deposited at the bottom of collections of water, and it is not by any means surprising, that toads or other animals should be found in them in the fossil state. But the incredible part of the statement, is that which would induce us to suppose that any living creature can continue to exist without air or food for centuries. Dr. Thomson, in his *Annals of Philosophy*, vol. v., p. 393, admits that there cannot be a doubt of the fact that living toads have been found in rocks, &c., but in no one case has he seen it ascertained, that the animal was completely excluded from the external air. "I have myself," says he, "conversed with workmen, who had found toads both in coal-pits and in quarries; but they were never able to bring decisive proof, that the animal was completely surrounded by the coal or the stone." In an account given in the same work, of a toad found in the trunk of a beech, the writer (Thomas Lauder Dick, Esq.) after stating that the reptile issued from a circular hole in the trunk, when the men were engaged in cross-cutting it, a little below the part where it divided into two large limbs, further remarks, "As far as I can make out from conversation with the man above alluded to, the tree had all the appearance of being quite solid above; yet I have no doubt that some slight, though almost imperceptible communication must have existed from the fork into the hole where the toad was lodged; and I am the more satisfied of this, from the account which the man gives of the appearance of the interior of the hole, which seemed to be sheathed all round with something resembling bark."

Mr. Swainson regards the popular belief, in this respect, as one of the most inveterate of prejudices, and says that on account of the circumstantial details given in newspapers and periodicals, nothing but an actual series of experiments could demonstrate the truth or falsehood of such an alleged departure from the known laws of nature. "Such experiments," he adds, "have accordingly been made, and the results have been just what might have been expected, by any one accustomed to inductive and analogical reasoning."

Some of the experiments alluded to are these:—Three toads were shut up in sealed boxes by a French experimentalist, and at the end of eighteen months, when they were examined, one was found to be dead, and the two others in a languid and dying state. That the animals were not all dead, is, we think, a proof that the air had not been perfectly excluded. Dr. Macartney, in investigating this subject, made the following trial of the capabilities of the animal to endure exclusion from the air. He first placed a toad in a glass vessel, covered loosely with a piece of slate, and buried the vessel containing the toad, about a foot deep, in a garden; on digging it up a fortnight afterwards, the animal was in perfect health, and had recovered from a wound it had previously received in the thigh. He then took the same toad, and having secured the top of the vessel in such a way that no air nor moisture could be admitted, he buried it in the same place, and on raising it a week afterwards, found the animal dead and putrid; hence he concluded that the toad cannot exist if air and moisture be perfectly excluded. It is not, indeed, to be credited that any animals possessing lungs should live for an indefinite time, without some communication with atmospheric air. In another article we propose to conclude this interesting inquiry, and to lay before our readers an abstract of Dr. Buckland's experiment and observations on the subject.

To be resigned, when ills betide,
Patient, when favours are denied,
And pleased with favours given;
This, O my friend, is wisdom's part.
This is that incense of the heart,
Whose fragrance smells to Heaven.

DR. COTTON.

PERPETUAL LAMPS.

ONE of the favourite schemes of the alchemists was the construction of a lamp that should burn for ages. Several vague passages in the writings of the Arabians, tending rather to inquire into the possibility of constructing a perpetual lamp, than an account of its existence, together with certain obscure passages and inscriptions in Latin, misled some of our students during the middle ages, and, with the ill-directed zeal of those who sought for the philosopher's stone and the elixir of life, they attempted to recover the perpetual fire, with which their predecessors were supposed to illuminate the abodes of their illustrious dead.

Before our modern chemistry had dissipated most of the day-dreams of alchemy, the learned were much divided in their opinions on this subject: but of all the champions in favour of perpetual lamps, none has made greater efforts to obtain credit to their existence, than Fortunio Liceti, in his book entitled *De Reconditis Antiquum Lucernis*. But this author confounds with the perpetual lamps, the lamp of Demosthenes, the vestal fire at Rome, &c.; now it is well known, that the flame of these lamps was continually kept up by a due supply of oil, whereas, the great problem to be solved was, how to construct a lamp, which being once lighted, should continue to burn for ever without a fresh supply of oil. It will scarcely be believed at the present time, that, like the problem of perpetual motion, much learning, ingenuity, and time have been bestowed upon this foolish idea.

We will instance a few of the facts upon which the partisans of perpetual lamps supported their reasoning: 1. The tomb of Tulliola, the beloved daughter of Cicero, was discovered, it is said, under the pontificate of Pius III. It is pretended that in this tomb, there was a lamp actually burning; but which became extinguished on the admission of air. 2. From the lamp of Olybius a strong argument is deduced: we are gravely assured, that in the year 1500 some peasants digging to a considerable depth at Atesta, near Padua, came to a tomb, in which they found two earthen urns one within the other. The inner, it is said, contained a burning lamp placed between two phials, one filled with liquid gold, and the other with liquid silver. On the large urn was the following inscription:

Plutoni sacrum munus ne attingite, fures,
Ignotum est vobis hoc quod in orbe latet;
Namque elementa gravi clausit digesta labore,
Vase sub hoc modico, maximus Olybius,
Adsit secundo custos sibi copia cornu,
Ne tanti pretium depereat laticis.

Translation.

Touch not, O thieves! the gift sacred to Pluto! the thing concealed within is unknown to you. For the great Olybius inclosed in this small vase certain elements compounded with difficulty. Lest the value of so much juice be lost, may Plenty, her own guardian, be present with prolific horn.

The other urn is said to have been inscribed also with these lines.

Abite hinc, pessimi fures;
Vos quid vultis vestris cum oculis emissitiis?
Abite hinc vestro cum Mercurio
Petasato caduceatoque
Maximus maximum donum Plutoni hoc sacrum fecit.

Translation.

Depart hence, vile thieves;
What do ye here, with prying face and eyes?
Depart hence, with your patron Mercury,
Him of the broad hat and the wand of snakes.
Maximus made this great gift sacred to Pluto.

Such is Gesner's account of this curious discovery. Liceti quotes a letter of one Maturantius, who informs his friend Alphenus that he had got possession of this valuable treasure. "Both the vases," says he, "with the inscriptions, the lamp and the phials, have fallen into my hands, and are now in my possession. If you

saw them you would be astonished. I would not part with them for a thousand crowns of gold." This is the language of a man of more enthusiasm than sense; he has evidently been deluded into the belief, that he possesses an inestimable treasure. The lamp, however, must have lost its chief value, for it appears that this, as well as the former tomb, was discovered by illiterate peasants, and "therefore," as the credulous Porta affirms, "the treasure being handled too roughly, the lamp broke in their hands and was extinguished."

3. About the year 800, a tomb is said to have been discovered at Rome, which appeared from the following inscription to be that of the famous Pallas, the son of Evander.

Filius Evandri Pallas quem lancea Turni
Militis occidit, more suo jacet hic.

Translation.

Pallas, the son of Evander, whom the lance of Turnus the soldier killed, lies here with his peculiar rites.

A burning lamp is also assigned to this tomb, which must have been kindled about 2000 years before, since it was shut up in the year 1170 before the Christian era.

4. St. Augustine mentions a perpetual lamp, in the temple of Venus, and says that the flame adhered so strongly to the combustible matter that wind, rain, or tempest could not extinguish it, though continually exposed to the air, and to the inclemency of the seasons. After endeavouring, in vain, to explain several difficulties in the mechanism of this lamp, he concludes that it might have been the work of demons, in order to blind the pagans more and more, and to attach them to the infamous deity worshipped in this temple.

5. Cassiodorus informs us that he made perpetual lamps for his monastery at Viviers. His words are:—

Paravimus etiam nocturnis vigiliis mecanicas lucernas conservatrices illuminantium flammaram, ipsas sibi nutrientes incendium, quæ humano ministerio cessante prolixè custodiant uberrimi luminis abundantissimam claritatem, ubi olei pinguedo non deficit, quamvis jugiter flammis ardentibus torreatur.

Translation.

We have also prepared for our nocturnal vigils, certain mechanical lamps, preservers of enlightening flames, the lamps themselves nourishing the combustion; which, without the service of an attendant, liberally maintain the abundant lustre of richest light, provided the fat of oil be not wanting, although it is continually burned with an ardent flame.

These are the principal reputed facts, upon which has been founded the belief in the existence of perpetual lamps. It will be seen that the evidence is very weak, and a few words will be sufficient to disprove it altogether.

The tale respecting the tomb of Tulliola is as old as the year 1345. A body is said to have been found in this tomb; this could not have been the body of Tulliola, for in the time of Cicero the Romans burned their dead. The peasants who pretended to see the lamp burning in the tomb of Olybius might easily have been imposed upon by their fears, or by some vapour exhaled from a place shut up for so many ages. The inscription, too, does not favour the story, for it is by no means necessary that a gift sacred to Pluto should be a burning lamp. If there be any truth in the discovery of this tomb, it probably belonged to some alchemist of no very remote age. If the Romans had any idea of perpetual lamps there would be distinct notices of them in their writings. Pliny, who enumerates the common inventions of his time, says nothing of this perpetual fire. Plutarch, indeed, speaks of the lamp of Jupiter Ammon, which burned a whole year, but the Pagan priests had doubtless many secret methods of keeping up the flame. The lamp spoken of by St. Augustine might have been a kind of torch, such as is now sold by every oilman, and as to the lamps of Cassiodorus, they supplied themselves with oil

by means of a reservoir, and the inventor only means to say that these lamps lasted a long time compared with the common lamps of that period, which stood frequently in need of having oil poured into them. The story of the lamp of Pallas is scarcely worth a remark; the Latin of the inscription belongs to a period many centuries later than the time when Pallas was slain by Turnus.

The credulity of Liceti, the great champion of perpetual fire, was such that he finds in the lamp of the tomb of the necromancer Merlin, described by the poet Ariosto, a proof of perpetual lamps.

The alchemists considered three things to be necessary to the construction of a perpetual lamp:—1, an indestructible wick; 2, indestructible oil,—and 3, fire that would burn without air. The threads of asbestos seemed to supply them with the first:—from the indestructible qualities which they assigned to the precious metals, these seemed likely to furnish the oil, provided they could be reduced to a liquid form, and preserved as liquids under ordinary temperatures:—the third condition seemed likely to be answered by taking advantage of some of the known properties of phosphorus.

We need scarcely inform the reader that these conditions render the existence of perpetual fire impossible. All that need be said of the asbestos wick is, that it resists the action of fire more perfectly than cotton. Gold and silver may be fused by the application of a very intense heat, which being withdrawn the metals again become solid. They may also be dissolved in acids, but in such case they lose their distinctive characters as simple substances, and the solutions are quite combustible. The third condition is equally impossible;—there can be no combustion without the presence of a combustible body, and a supporter of combustion; and air is as necessary to the support of flame as of life.

Notwithstanding that sound philosophy is opposed to the existence of the perpetual fire:—

We have seen in some journal, (says M. Ozanam,) that a Neapolitan prince was in the secret of perpetual lamps. But as several years have elapsed since this circumstance was announced, and as the secret has not yet been divulged, there is reason to think that the information was premature. It is no new thing to see chemists, employed in researches respecting the philosopher's stone, announce their discovery before the operation is finished. Some even, in consequence of the good colour of their matter, like that described by Philalethes, and the learned Morien, have gone so far as to purchase estates for a large sum of money. But unfortunately, everything is still deficient, and the good alchemist dies in the hospital, protesting that nothing was wanting to his matter, but an imperceptible degree of coction, to render him the richest man on the earth.

In regard to the perpetual lamp of Naples, we shall change our opinion when we learn with certainty that it has been tried, and that it has burned only one year.

In one of his pleasant essays in the *Spectator*, Addison introduces the story of the sepulchre of Rosicrucius, the founder of that sect whose disciples pretend to new discoveries which they are never to communicate to the rest of mankind.

The Egyptians, who made use of hieroglyphics to signify several things, expressed a man who confined his knowledge and discoveries altogether within himself by the figure of a dark lantern closed on all sides, which, though it was illuminated within, afforded no manner of light or advantage to such as stood by it. For my own part, as I shall from time to time communicate to the public whatever discoveries I may happen to make, I should much rather be compared to an ordinary lamp, which consumes and wastes itself for the benefit of every passenger.

A certain person having occasion to dig somewhat deep in the ground, where the philosopher [Rosicrucius] lay interred, met with a small door, having a wall on each side of it. His curiosity, and the hopes of finding some hidden treasure, soon prompted him to force open the door. He was immediately surprised by a sudden blaze of light, and discovered a very fair vault. At the upper end of it was a statue of a man in armour, sitting by a table, and leaning

on his left arm. He held a truncheon in his right hand, and had a lamp burning before him. The man had no sooner set one foot within the vault than the statue erected itself from its leaning posture, stood bolt upright; and upon the fellow's advancing another step, lifted up the truncheon in his right hand. The man still ventured a third step, when the statue with a furious blow broke the lamp into a thousand pieces, and left his guest in a sudden darkness.

Upon the report of this adventure, the country people soon came with lights to the sepulchre, and discovered that the statue, which was made of brass, was nothing more than a piece of clock-work; that the floor of the vault was all loose, and underlaid with several springs, which upon any man's entering, naturally produced that which had happened.

Rosicrucius, say his disciples, made use of this method, to show the world that he had re-invented the ever-burning lamps of the ancients, though he was resolved no one should reap any advantage from the discovery.

This fiction may be taken as an ingenious satire on the incredible narrations already cited.

INFLUENCE OF THE ARTS AND SCIENCES.

PLEASURE is a necessary of life. The fine arts have the effect of wakening our sensibility, stimulating mental activity, purifying our taste, and bringing beauty and cheerfulness to animate many of the melancholy and monotonous hours of life. The fine arts are the methods by which our physical and animal sensations are converted into moral perceptions. They give independent and honourable employment to a class of the most highly gifted of our fellow creatures. In their different varieties and degrees of utility and dignity, they are all valuable. The arts of poetry, painting, music, sculpture, ornamental architecture, gardening, with many of the productions of literature and imagination, supply an inexhaustible fund of recreation and enjoyment that have no counterbalancing pains.

But it is the science of our era, that is its pride and its boast. Science that opens the golden gates of a new world of ideas, whose splendour inspires imagination with thoughts unknown before, and where our noblest conceptions of beauty and grandeur are amazed by the surpassing forms of real existence, stretching illimitably beyond each preceding discovery made by man.

Fresh and increasing excitements to curiosity spring up from the profusion and variety of natural objects, each supporting a science complete in itself, and yet so linked, by all-pervading laws, with every other, as to be but a portion of one universal system.

Everything in the form of matter, however coarse, the refuse and dross of more valuable material, is resolvable by science into elements too subtle for our vision, and yet possessed of such potency that they effect transmutations more surprising than the fables of magic. The points that spangle the still blue vault, and make night lovely to the untaught peasant, interpreted by science, expand into worlds and systems of worlds; some so remote, that even the characters of light, in which their existence is declared to us, can scarcely give full assurance of their reality,—some kindred planets, which science has measured, and has told their movements, their seasons, and the length of their days. Such resemblances to our globe are ascertained in their general laws, and such diversity in their peculiar ones, that we are led irresistibly to believe they all teem with beings, sentient and intelligent as we are, yet whose senses, and powers, and modes of existence, must be very dissimilar, and indefinitely varied. The regions of space, with the field of our vision, present us with phenomena the most incomprehensibly mysterious, and with knowledge the most accurate and demonstrable. Light, motion, form and magnitude, the animal, vegetable, and mineral kingdoms, have their several sciences, and each exhaust a life to master it completely.—*Woman's Rights and Duties.*

EASY LESSONS IN CHESS.

IX.

In the present lesson we will invite your attention to another KING'S KNIGHT'S GAME, adopting a different style of play, and giving to Black the first move. You will therefore have to conduct the defence, the attack being generally at the discretion of him who has the first move.

BLACK.

1. K. P. two squares.
2. K. Kt. to K. B. third square.
3. K. B. to Q. B. fourth square.
4. Q. B. P. one square.

WHITE.

1. The same.
2. Q. Kt. to Q. B. third square.
3. The same.
4. K. Kt. to B. third square.

Thus far the moves on both sides are the same as in the last lesson. The variation commences with the fifth move of the first player, when, instead of playing Q. P. two squares, he moves—

5. Q. P. one square.

This move produces an entirely different game, and requires much skill in manœuvring the pawns. The first part of the contest is not carried on as in the last game, in the centre of the board, but by bold advances of the pawns on the Queen's side, which leave behind them a range for the pieces. There is no immediate necessity on either side for castling: you therefore remove your K. B. to a very advantageous position while you have time.

6. Q. Kt. P. two squares.

5. K. B. to Q. Kt. third square.
6. Q. R. P. one square.

The advance of the pawns on his queen's side not only prevents you from playing Q. Kt. to Q. R. fourth square, in order to change off his K. B., which it would be desirable for you to do, but also requires you to provide a retreat for your Bishop, and you do so thus early, reserving several other important moves which might be made until you see more clearly your adversary's plan of attack.

7. Castles.

7. Q. P. one square.

It is nearly always good play to move the Q. P. as soon as your adversary has castled. It releases the Q. B. and in this case gives an additional support to your K. P.

8. Q. R. P. two squares.
9. Q. B. to K. third square.

8. Castles.
9. The same.

It is generally desirable early in the game to change your Q. B. for your adversary's K. B. That piece moves on the same colour as that on which your King stands; and after you have castled it frequently prevents your K. B. P. from being moved. But in the present case it is necessary to be very cautious how you adopt this axiom. There are several things to be done:—1. If he play K. B. takes Q. B. he improves your game,—for you will retake B. with your K. B. P., and in the present and similar positions a doubled pawn at K. third square is by no means badly placed, for among other advantages it stands ready to supply the place of the K. P. should that valuable pawn be exchanged; another advantage to you is, that your K. R. can be readily brought to command a most important file. 2. If his move be Q. B. takes K. B. your answer will also be Q. B. takes K. B., thus breaking up his centre, and effectually spoiling his game: to prevent which, his best move is—

10. Q. Kt. to Q. second square.

because, if you now capture his K. B. he can retake with the Q. Kt., and thus maintain his central position.

10. K. B. takes Q. B.

Your reason for taking his B. is to prevent him from taking yours, for by doing so he would double one of your pawns most disadvantageously; for you must retake with Q. B. P., which would thus be removed to Q. Kt. third square, and the general rule for pawns is to get them towards the centre, not the sides of the board. Had you removed your K. B. to Q. R. second

square, he would have done well to capture it, for in retaking you would bring your Rook into a most useless and unavailable position. Thus the disadvantages to you would be greater than the advantages to him of having his K. B. P. at K. third square.

11. K. B. P. takes K. B.

11. Q. P. one.

Your eleventh move is a very good one, and quite necessary to free you from the present cramped position. It forces him to take the pawn, for he cannot retreat with K. B. without a sacrifice of position. You see now the advantage to him of having an extra pawn at K. third square.

12. K. P. takes P.

12. K. Kt. takes P.

This is much better than taking the pawn with the B. You have now free space for moving your K. B. P. two squares, which is frequently a good move as soon as it can be done with safety after the exchange of Bishops. Besides, this Knight threatens to take the P. at his K. third and to fork Q. and R., to prevent which he plays—

13. B. takes Kt.

He did quite right to take this Knight. Never, if possible, allow your adversary's Knights to get into your game, and whenever they threaten to become troublesome do not hesitate to exchange a Bishop for one of them. Indeed a Knight is frequently more dangerous than a Bishop, from his power of stepping upon either colour, while a Bishop is confined to one. Under the guidance of skilful play a Knight frequently decides the fate of a game.

13. Q. takes B.

threatening his Q. P.

14. Q. Kt. to K. fourth square.

14. K. R. to Q. square.

again threatening his Q. P. If he advance the Q. P. he loses Q. Kt. He may defend it by playing K. Kt. to K. square, but this retrograde movement is by no means desirable in the present state of the game. He therefore does well to abandon the Q. P. and advance the K. Kt. (i.e. the Knight standing at K. B. third square), to K. Kt. fifth, for if you take the Q. P. he is able to form a strong attack.

15. K. Kt. to K. Kt. fifth square.

15. Q. takes Q. P.

16. Q. to K. R. fifth square.

He thus abandons the central pawns for the sake of a position in your camp which threatens to be dangerous. You must now act on the defensive, for if you take his K. P. checking, he moves K. to the corner and rather improves his game: therefore you play—

17. Kt. takes B.

16. K. R. P. one square.

17. K. B. P. takes Kt.

He does not retreat with the Kt. but captures your Bishop, threatening your R.: you must retake with the K. B. P., and what before would have been an advantage is now the reverse: two *isolated* pawns at your K. third and fourth squares are by no means desirable.

18. Q. to K. Kt. sixth square.

A much better move than checking at K. B. seventh, for he now defends his Q. Kt., brings his Q. into a strong position, and his object should be to bring up other pieces to her assistance. Besides, by this move he threatens to win your Q. by checking with Kt. at your K. B. third square, to prevent which you play—

18. K. to K. R.

19. K. R. to K. B. seventh square.

If you take his K. P. checking he will move K. to K. R.

19. K. R. to K. Kt. square.

20. Q. R. to K. B.

It is very desirable thus to unite the Rooks on the same file.

20. Q. R. to Q. B.

Your object is to defend the Q. B. P., as you do not anticipate any immediate danger.

21. R. takes K. Kt. P.

This sacrifice is premature and will cost him the game; because by your next move you prevent him from following up the attack which the sacrifice seemed to promise. Before a sacrifice is made it is always necessary to observe whether the adversary has a check at command:—the power to check frequently neutralizes an attack.

21. Q. takes K. P. checking.

by which move you defend the pawn at K. R. third square, which Black seems to have calculated on taking.

22. K. to K. R. square.

22. R. takes R.

23. Q. takes K. P.

If you take his Kt. he captures your Q. R., therefore,

23. Q. R. to K. Knt. square.

which is a much better move, because it unites your Rooks on the same file, and you threaten to take his K. Kt. P. Therefore, to displace this Q. K. he plays—

24. Kt. to K. B. sixth square.

24. Q. to K. seventh square.

threatening mate.

25. R. to K. Kt. square.

Your obvious move now appears to be to take his K. Kt. P. with the Rook. Should you do so you lose the game in two moves*. Therefore,

25. Kt. to Q. square.

26. Q. to K. R. third.

After being worsted in the skirmish and thus compelled to retreat, his game may be considered as lost. It is necessary, however, for you to defend the K. R. P. otherwise you are mated in two moves; but you can easily do this by playing

26. Kt. to H. B. second

and can afford to give up your R. for his Kt.

27. Kt. takes R.

27. R. takes Kt.

We need not pursue this game further. You have the advantage of a Knight and must win:—that is, supposing you make no blunders; for these of course can never be foreseen or calculated by a third party, although they constitute one of the most essential differences between a bad and a good player, and ought always to form part of every individual game in which they occur.

* For example.

26. Q. takes R., checking.
27. R. takes R., check-mate.

25. R. takes K. Kt. P.
26. R. takes Q.

We have already given four problems, in which the mate was to be effected in two moves. The following are the solutions:—

PROBLEM I.

1. Q. takes K. R. P., checking. 1. Q. takes Q.
2. Kt. to K. B. seventh square.

effecting what is called a smothered mate.

PROBLEM II†.

1. Q. to Q. B. fifth sq., checking. 1. Pawn takes Q.
2. R. to Q. eighth sq., check-mate.

PROBLEM III.

1. Q. takes K. B. P., checking. 1. Rook takes Q.
2. R. to K. eighth sq., check-mate.

Had Black moved his K. to K. R., White would have given mate by taking the R.

PROBLEM IV.

1. R. to Q. B. seventh sq., checking. 1. B. takes R.
2. Kt. to Q. R. seventh square, check-mate.

The difficulty of solving chess problems increases, of

† A Correspondent has attempted to solve this problem as follows:—

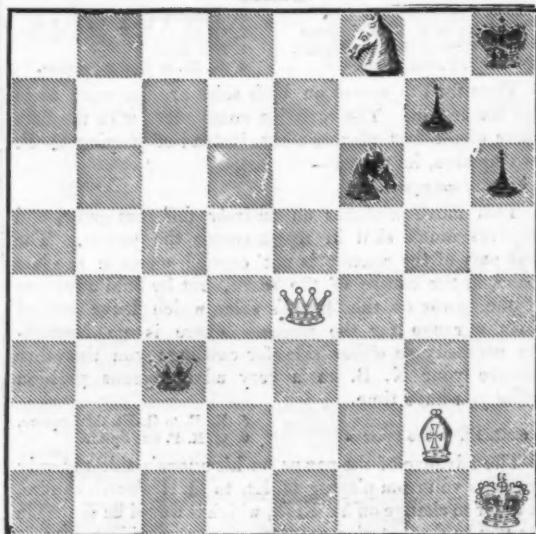
1. K. to Q. B. sixth sq., checking. 1. K. to Q. fifth.
2. Q. takes pawn, check-mate.

But a moment's consideration ought to have proved to him that this is not check-mate, for the K. can move to his sixth square.

course, with the number of moves in which the mate is to be effected. Those in which the mate is to be given on the second move are among the easiest, and scarcely admit of that display of brilliant ingenuity which characterizes problems where the mate is effected in a larger number of moves.

PROBLEM V. *White to move first, and give check-mate in three moves.*

BLACK.



WHITE.

NATURE expects mankind should share
The duties of the public care.
Who's born for sloth? To some we find
The ploughshare's annual toil assigned;
Some at the sounding anvil glow;
Some the swift-gliding shuttle throw;
Some, studious of the wind and tide,
From pole to pole our commerce guide;
Some, taught by industry, impart
With hands and feet the works of art
While some, of genius more refined,
With head and tongue assist mankind;
Each, aiming at one common end,
Proves to the whole a needful friend.
Thus, born each other's useful aid,
By turns are obligations paid.—GAY.

THE good widow's sorrow is *no storm*, but a *still rain*; commonly it comes to pass that that grief is quickly emptied that streameth out at so large a vent; whilst their tears that but drop will hold running a long time.—FULLER.

In whatever light we view religion it appears solemn and venerable. It is a temple full of majesty, to which the worshippers may approach with comfort, in the hope of *obtaining grace and finding mercy*; but where they cannot enter without being impressed with awe. If we may be permitted to compare spiritual with natural things, religion resembles not those scenes of natural beauty where every object smiles. It cannot be likened to the gay landscape, or the flowery field. It resembles more the august and sublime appearances of Nature; the lofty mountain, the expanded ocean, and the starry firmament; at the sight of which the mind is at once overawed and delighted; and, from the union of grandeur with beauty, derives a pleasing, but a serious, devotion.—BLAIR.

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